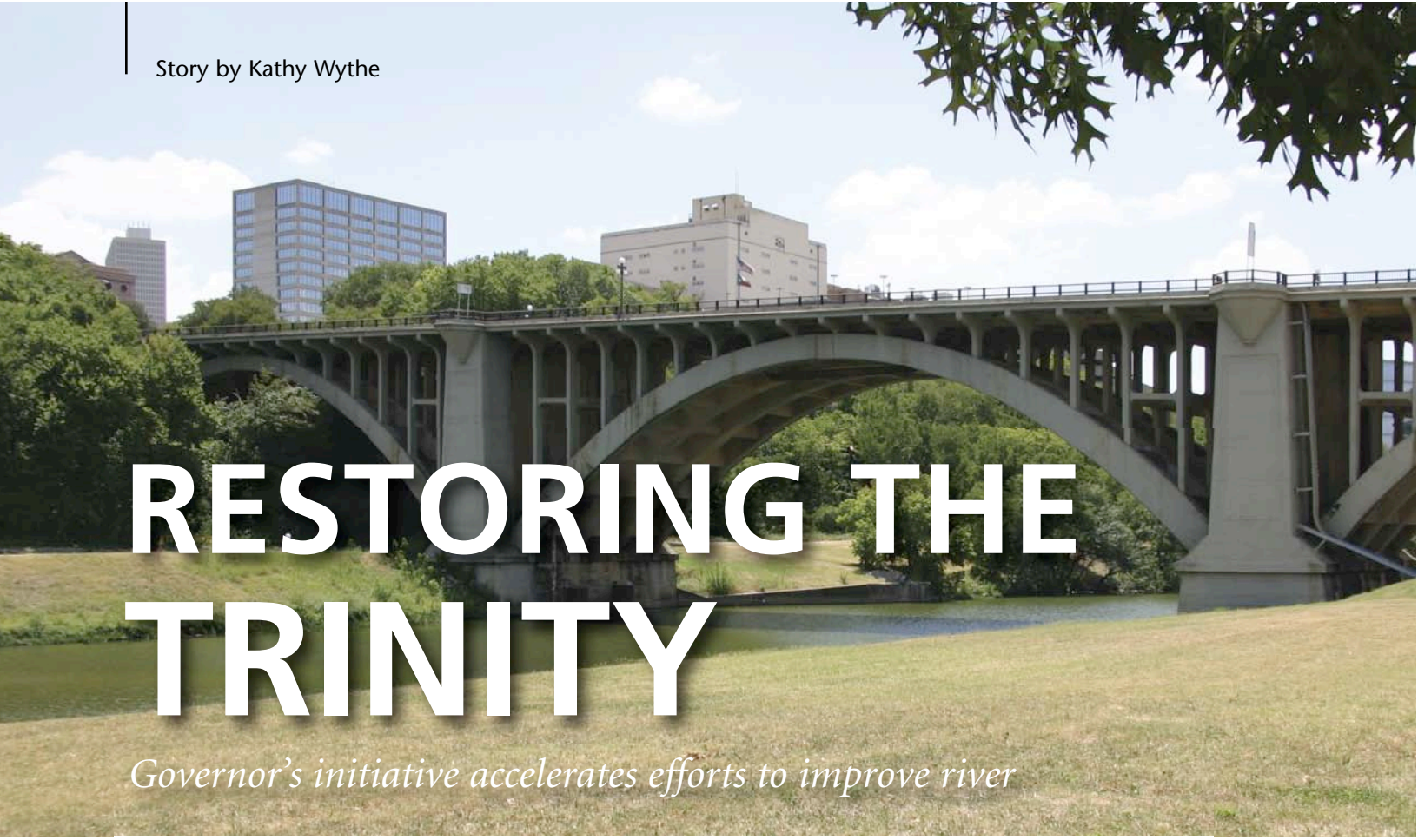
Story by Kathy Wythe



RESTORING THE TRINITY

Governor's initiative accelerates efforts to improve river

Editor's Note: The Trinity River Basin has been the center of water resources projects for years. With Gov. Rick Perry's announcement of the Trinity River Environmental Restoration initiative, attention has increased concerning this river that stretches from North Texas to Galveston Bay. The following stories feature a few of the projects that deal with water conservation and water quality of the river.

A comprehensive effort to improve the Trinity River Basin watershed, its ecosystem and water quality is underway with federal, state and local agencies working together with The Texas A&M University System. In September 2006, Gov. Rick Perry announced the Trinity River Basin Environmental Restoration Initiative.

The Trinity River, the 512-mile-long river that stretches from north of the Dallas/Fort Worth Metroplex to Galveston Bay, and its natural resources are important assets to Texas. Providing drinking water for more than 8.9 million residents, the river and its 1,983 miles of major tributaries drain an area of more than 11.5 million acres.

Fort Worth's Main Street crosses the Trinity River just past the convergence of the West and Clear Forks of the river.

Rapid development and changes in land use, however, strain its reservoirs' capacities and threaten its water quality, according to those involved in restoring the river.

Although many projects are already in place to protect the river, it received additional attention when Gov. Rick Perry announced the Trinity River initiative in news conferences in Arlington and Houston.

"The cities of Fort Worth and Dallas both have major, ongoing Trinity River projects, and I compliment city and county leaders for their vision for restoring the vitality of this great river," Perry said at a press conference in Arlington. "Our objective is to work closely with the cities, private landowners, federal and state agencies to build on the success that the Metroplex has enjoyed.

"If Texans all along the Trinity River band together to fully protect its water quality and restore the river to its more pristine past, it will have a dramatic impact on birds and wildlife, ecotourism and water quality," Perry said.

The A&M System's Institute of Renewable Natural Resources (IRNR) is working with the Trinity River Authority (TRA), the Trinity Basin Conservation Foundation and other agencies and non-profit organizations to help landowners and other stakeholders make their own decisions on how the watershed is managed and restored, said Dr. Neal Wilkins, IRNR director. "The stakeholders have the most at stake in restoring the river," he said.

IRNR and TRA are developing a user-friendly Trinity River Internet Mapping System (TRIMS) that will give users access to mapping data, remote-sensing data and low-elevation aerial photographs and other information that will help in planning the restoration. Funded by a Clean Rivers Program grant from Texas Commission on Environmental Quality (TCEQ), TRIMS will generate information for future projects that will address water quality, hydrology, floodplain management, wetland restoration, bottomland hardwood establishment and wildlife habitat management, Wilkins said.

TRA General Manager Danny Vance said, "The databases that are being pulled together show a lot about how the river is doing. We are glad to be working with other Trinity interests on this."

IRNR also has funding from the Texas State Soil and Water Conservation Board (TSSWCB). Through partnerships with local soil and water conservation districts, the TSSWCB provides technical resources to assist rural, agricultural producers in making land-use management decisions that protect water quality and enhance water conservation.

"The governor's Trinity River Basin Environmental Restoration Initiative will strengthen the Board's work with farmers and ranchers to address rural-urban interface issues," said Aubrey Russell, TSSWCB chairman. "The programs and tools developed through this initiative will improve the ability of landowners to make informed local decisions on watershed management."

The project's Web site is **http://trinityriverbasin.tamu.edu/**.

"TRIMS is the first step then we will begin the planning process," Wilkins said. "Long-term, we want to provide a means for local stakeholders to make sustainable and measurable contributions to the restoration of the Trinity River."

Tarrant Regional Water District (TWRD) and the A&M System's Spatial Sciences Laboratory (SSL) and the Agricultural Research and Extension Center at Dallas are combining efforts to develop a comprehensive urban water conservation education program in both the Dallas/Fort Worth Metroplex and Houston areas.

Urban water conservation is essential to meet the rising demands of these rapidly growing areas. In addition to the growth, the region's worst drought in 50 years resulted in many cities in the Metroplex implementing outdoor water restriction programs in 2006, and reservoirs such as Lakes Lavon and Chapman were substantially below normal levels.

"This urban water conservation educational program will be a large-scale undertaking to the public," said Dr. Frank Gilstrap, resident director of the Dallas center.

With funding by the Texas Water Development Board (TWDB) and TCEQ, the urban education program will teach the public through workshops about urban

land stewardship, with emphasis on water-efficient landscaping techniques, water-conserving plants and landscapes that help prevent nonpoint source pollution.

"We will be using existing water educational programs such as WaterWise, Water IQ, Earth Kind and Texas Smartscapes®," said Clint Wolfe, manager of the project. "In addition, the Dallas center will be working with Texas Cooperative Extension specialists to develop topical information on water conservation for local cities and organizations.

"TRWD will be developing demonstration gardens within the community so people can see that water conservation landscapes can be attractive and economical," Wolfe said.

Workshops will teach landscapers, engineers, grounds managers, nursery owners, developers and builders how to design and install landscapes that not only conserve water but also prevent nonpoint source pollution. The program will also provide mini-grants for cities, counties and agencies to conduct water education programs in the Metroplex and Houston areas, Wolfe said.

This educational effort will involve a number of local organizations and cooperators, including the North Central Texas Council of Governments, University of Texas at Arlington, TSSWCB, Master Gardeners, Botanical Research Institute of Texas and others. The Web site for the project is **http://trinitybasin.tamu.edu**

Another project funded by the TWDB, SSL will study how urbanization and other land-use changes in the Upper Trinity watershed have affected sediment and nutrient loading into the reservoirs.

Dr. Raghavan Srinivasan, SSL director, said his lab will use the SWAT model to predict the effects of urbanization over the past three decades as well as practices designed to reduce stormwater runoff and soil and stream-bank erosion.

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"Modeling will provide information to help managers identify specific projects needed to protect the watershed, maintain reservoir capacity and improvement of water quality," Srinivasan said. "Once completed, this modeling could serve as a prototype for the remainder of the basin and the rest of the state."

Dr. Allan Jones, Texas Water Resources Institute director, said the governor's initiative has pulled together a diverse group of organizations for a common purpose and served as the catalyst for these projects.

The funding agencies also see this initiative as positive for the state and its citizens.

"These projects, as part of the governor's Trinity River Basin Environmental Restoration Initiative, will provide citizens and professionals alike with powerful tools and programs for understanding water quality issues, making informed planning decisions and promoting effective restoration projects," TCEQ Chairman Kathleen Hartnett White said.

"The TWDB is pleased to participate along with other state and federal agencies in this effort to better understand the many complexities of the Trinity River Basin," said Kevin Ward, TWDB executive administrator. "A very important component of this effort will be to contribute to the advancement of municipal water conservation through education."

Ward said the $200,000 in grant funds was given to the TRWD and fellow A&M System collaborators to study how land use changes may impact sediment and nutrient loading of reservoirs in the basin and the development of an urban water conservation education program. "These are fundamental components of our long-range goal of the best use of the natural resources in the Trinity River Basin."

Some of the other ongoing projects along the Trinity River include:

Trinity River Vision–Fort Worth

The Trinity River Vision Master Plan addresses the environment, ecosystems, flood protection, recreational opportunities, access to the waterfront, preservation of green space and urban revitalization on eight segments of the river and its tributaries within the Fort Worth area. (**http://www.trinityrivervision.org/**)

Trinity River Corridor Project–Dallas

The city of Dallas is collaborating with state and federal agencies to construct the Trinity River Corridor Project involving flood control and transportation improvements, downtown lakes, park facilities and the environmental preservation of the Great Trinity Forest through the acquisition of 3,500 acres of land along the Trinity. (**http://www.trinityrivercorridor.org/**)

North Central Texas Water Quality

TWRI, Texas Agricultural Experiment Station and Texas Cooperative Extension are collaborating with TRWD to study water quality protection and sediment and nutrient loading improvements in five reservoirs along the Trinity River. (**http://nctx-water.tamu.edu/**)

Richland–Chambers Water Quality

Texas Agricultural Experiment Station and USDA's Agricultural Research Service scientists are verifying the effectiveness of best management practices installed on Mills Creek within the Richland–Chambers Reservoir watershed to reduce nutrient enrichment and algal growth from excess nitrate and nitrite and high pH.

Richland–Chambers Wetlands

TRWD is diverting water from the Trinity River, treating it in constructed wetland water-treatment units and storing the water in reservoirs. Additional stages of the project will consist of constructing approximately 1,229 acres of treatment wetlands.

Texas Coastal Watershed Program

The Texas Coastal Watershed Program, a part of Texas Sea Grant and Texas Cooperative Extension, provides education and outreach to local governments and citizens on the impacts of land use on watershed health and water quality. Project areas focus on water quality and land use, soil and site evaluation for on-site sewage systems, urban stormwater treatment, and wetland creation and restoration. (**http://www.urban-nature.org/**)